About Knowledge-Based Collaborative Environments

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Abstract: - Collaboration involves a different approach to business – focused on managing business relationships between people, within or without groups, and within and between organizations. Collaborative enterprises differ from other business in a number of ways and collaborative working needs to be simultaneously a business philosophy, strategy and operational working. Effective collaboration unlocks the potential of the collective knowledge and intellectual capital of the organization and its networks of business partners, suppliers and customers. At the core of true collaboration is the ability to share and catalog knowledge, ideas, standards, best practices, and lessons learned and to be able to retrieve that knowledge from anywhere at any time. Integrating all kind of collaboration capabilities into an enterprise portal, we can build a powerful IT infrastructure for the collaborative enterprise.

Key-Words: - collaboration**,** collaborative environment**,** knowledge management, enterprise portal

1 Introduction

To collaborate effectively, people work in large virtual teams, created quickly, spread around the world, and comprising colleagues, customers and partners. Working in these global team-based environments, people establish relationships that may be short-term project-focused or long-term and evolving over time. With each new relationship, companies invest in selecting the right people, learning how to work together, and determining how to extract the most value in terms of revenues and profits [18]. Integrating collaborative services with business functions allows companies to gain a significant competitive advantage. Information is shared more effectively, communication is more efficient, and companies can make quicker, more informed decisions. More specifically, companies can shorten sales cycles, accelerate product development, generate more transactions, increase partner/customer retention, and expedite problem resolution.

Effective collaboration requires actions on multiple fronts: early involvement and the availability of resources to effectively collaborate; a culture that encourages teamwork, cooperation and collaboration; effective teamwork and team member cooperation; defined team member responsibilities based on collaboration; a defined product development process based on early sharing of information and knowledge; collocation or virtual collocation; collaboration technology.

2 Collaborative Enterprises

Collaborative enterprises differ from other businesses in a number of ways and collaborative working needs to be simultaneously a business philosophy, strategy and operational working. Resuming, collaborative enterprises are [19]: networked and collaborative; core-competence focused and virtual; transparent to customer and partners; customer and partners centric; multi-disciplinary, community and team-based; strategically agile; change resilient and risk taking; knowledge creating and sharing; web-enabled; empowered and responsive.

At the core of true collaboration is the ability to share and catalog knowledge, ideas, standards, best practices, and lessons learned and to be able to retrieve that knowledge from anywhere at any time. The more collaborative the environment is, the more knowledge will be available to make right decisions the first time [6]. In non-collaborative environment, a large knowledge/decision gap exists early on. Using enterprise collaborative techniques, it is possible to make better use of a group's core understanding, thereby raising the starting level of knowledge available on an initiative and closing the gap.

2.1 Portal-Based Collaborative Environments

Technology plays a critical role in terms of how organizations collaborate today, being an enabler of interpersonal interactions that comprise collaboration. The web can support the introduction of collaborative practices in all areas and the web-based enterprise portal is biding to become the common information highway for the management of the enterprise. A corporate portal can effectively create a shared community across the

enterprise (B2E portal)/extended enterprise (B2C or B2B portal) [15]. Collaboration tools such as e-mail, discussion forums, online meetings, video conferencing and chat are now integral components of a corporate portal, all these collaborative capabilities are included on a horizontal basis across the entire portal.

A successfully enterprise portal represents a single entry point for collaboration, information dissemination and communication, application functionality and interactive capabilities within and without the corporate entity – all provided in an efficient and centralized manner. The portal must enable the creation of knowledge through collaboration tools, such as chat, threaded discussions and workflow. The created knowledge needs to be captured and stored for future use. In addition, outside knowledge needs to be brought into organization, and users need to be able to easily place their knowledge into the portal. All the knowledge, both structured data and unstructured content, must be easily retrievable. The portal must be configured to push relevant knowledge directly to the users. The level of support for each of these objectives defines the effectiveness of any enterprise portal solution.

The next generation of portal technology is seeing improvements in key features necessary for maximizing the value of enterprise information and knowledge, such as real-time collaboration, delivery of information and knowledge via wireless devices, robust security facilities, increased application and data integration capabilities, and simplified and centralized management and administration – all these necessary to support the enterprise's business.

2.2. Collaboration & Knowledge Management

Collaboration facilities improve decisions, increase knowledge. They facilitate better distribution of knowledge, improve planning and development cycles and create more functional and productive relationships within teams. This in turn increases productivity and company understanding of internal and external environments. Overall, employees will begin to have a better view of corporate information and the power to make informed decisions more effectively. A collaborative enterprise organization is a more agile organization. The ability of employees to quickly share their insights contributes to an organization's collective knowledge, and has a direct impact on its success. Successful companies continually seek and refine ways to make effective use of their employees' collective knowledge and experience. Information technologies that contribute to knowledge management solutions, such as enterprise portals, improve the enterprise's business intelligence and its collaboration capabilities. Collaboration is becoming an enterprise's business strategy sustained by IT technology. Integrating collaborative services with business functions allows companies to gain a significant competitive advantage. The benefits of collaboration within a portal are clear. It will continually facilitate and enrich the knowledge management process.

There are many different approaches toward knowledge management. Many concepts focus on social and cultural aspects only and ignore the role of technology. There are other approaches that are very technology-minded but provide no solutions to cultural challenges of knowledge management. Therefore, many companies have sophisticated concepts on how to manage knowledge, but have little understanding of how to implement and deploy them. The implementation of efficient knowledge management solution often proves to be very challenging. Complex organizations, such as networked group of firms or multi-national firms can be viewed as "constellations" of organizational units – knowledge nodes (KN). In this approach the collaborative community becomes an environment that must support two different processes: (1) the autonomous management of the knowledge that is produced locally within a single knowledge node and (2) the coordination of the different knowledge nodes without a centrally defined semantics [3]. Special intelligent agents are used to implement the distributed knowledge management strategy. The use of intelligent agents for knowledge network management has just begun to be explored. Each knowledge node represents a knowledge owner within the network, an entity that has the capability of managing its own knowledge both from a conceptual and a technological point of view. In the proposed architecture, a software agent, that "knows" the context of the knowledge node is associated to each KN. These agents have two functions: supporting the users of a KN to compose outgoing queries, and answering incoming queries from other KNs [14]. Knowledge management demands cultural flexibility, strong management of knowledge management project CSFs and an adequate technical collaborative foundation. If done right, knowledge management is supposed to create a collaborative environment.

2.3 Intercultural Aspects in Collaborative Enterprises

Teams in multinational companies are formed by members from different cultures and collaboration must overcome all intercultural differences. Virtual teams continue to gain popularity as organizations are becoming more engaged in global business operations, and as technology for facilitating collaborative work is becoming more readily available. An interesting aspect of the increased globalization of the business world is

the cultural diversity of the workforce involved in collaborative virtual work. As a result, the performance of a global virtual team may be contingent not only upon technology and task factors, but also upon a virtual group's cultural homogeneity or heterogeneity. A culturally heterogeneous group is expected to display types of behavior and interactions that are different from those displayed by a culturally homogeneous group. In a virtual setting, the impact of cultural heterogeneity on group performance might ultimately result in performance outcomes that are different from those generated by a culturally homogeneous group.

Managers may reduce the influence of national cultures and cultural differences in collaborative enterprises by developing a strong organizational culture. Internalization of a strong organizational culture is done through training, knowledge management, developing appropriate infomation systems, using integrating practices such as enforcing quality, superordinate goals, promoting linking between different cultural groups.

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Establishing business processes and strategies for collaborative environments supposes : (1)-defining virtual collaboration and what it means for an organization; (2)-assessing the activities, tasks and initiatives that would benefit from virtual collaboration or virtual team work; (3)-examining work practices and the cultural implications of working within collaborative environments; understanding the role of trust among virtual team members for better awareness of group dynamics and social interactions; (4)-exploring with senior management the benefits of collaborative environments and teamwork, and their impacts on business models; (5)-developing a set of guidelines and a framework for a clearer definition of the changing nature of current work practices; and (6)-incorporating the performance metrics and the success of virtual collaborative environments.

3 Franchise Communities – A Collaborative Enterprise Example

3. 1 Fundamentals

The working knowledge is the base of the franchise "family" relationship. The relationship is developed while franchisee learns from the franchisor how the business operates. In order to franchise knowledge effectively and continually, the franchisor must have a way of managing the company's knowledge base. The fast growth of franchising combined with the youth of the sector means that successful franchise companies must concentrate on developing new knowledge-specific skills: retaining the knowledge learned by the 'older' heads; getting new franchisees up to speed quickly; discovering and standardizing things that work (products, markets, procedures and processes); learning to do new things quicker than anyone else (new product/service development, new location set-ups, adopting new technologies).

The franchise companies must develop a suitable knowledge management strategy in order to create superior value for their customer: (1) to identify and locate existing knowledge in the franchise; (2) to promote actions that create new knowledge innovation and creativity, brainstorming and problem solving; (3) to develop a repository for the franchise knowledge; (4) to analyze, communicate and use the knowledge in order to create competitive advantage.

A portal environment can be a proper framework for franchise learning and knowledge management, which enables the franchise to develop dynamic capabilities and value-creating strategies.

3.2 Portal-Based Infrastructure

The "family" relationship between the franchisor and the franchisee units is generally based on an intra-enterprise collaboration through Intranet. Also, the collaboration with suppliers is possible through Extranet, which enables the franchisor and the franchisees to build up relationships with goods distributors, real estate agents, marketing agents, information systems consultants. Instead, we propose an enterprise knowledge portal (EKP) environment.

The suggested distributed portal model enables the franchise to develop dynamic capabilities and value-creating strategies to enrich the franchisor/franchisee relationship. The proposed EKPs extend the franchise community to its suppliers and are designed to support B2E processes and B2B activities and their knowledge repository will leverage the working knowledge within the franchise system. The distributed knowledge repository contains the franchise package that is maintained by the franchisor and the specific/local knowledge of the market stored in the franchisee units.

Recording to the distributed knowledge management (DKM) strategy the networked franchise community can be viewed as a "constellation" of organizational units (franchisor, franchisees) – knowledge nodes. This strategy is based on two general principles [2], [3]: (1) Principle of Autonomy – each unit manages its own knowledge; through their EKP Web-based interface they provide an unique access point to their knowledge (franchise package or specific/local knowledge of the market); (2) Principle of Coordonation – each unit must be enabled to exchange knowledge with other units not by imposing the adoption of a single, common

interpretative schema, but through a mechanism of mapping other units' context onto its context from its own perspective.

Each knowledge node (franchisor/franchisee unit) represents a knowledge owner within the network, an entity which has the capability of managing its own knowledge both from a conceptual and a technological point of view. In the proposed architecture, a software agent, that "knows" the context of the knowledge node (KN) is associated to each KN – Figure 1. These agents have two functions: supporting the users of a KN to compose outgoing queries, and answering incoming queries from other KNs [14].

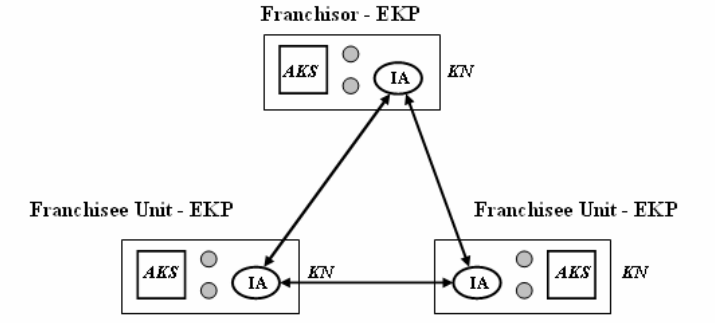

Fig. 1 The DKM Architecture of the Franchise Community

The core of an EKP consists of an Artificial Knowledge Server (AKS), that manages the homogeneous knowledge repository, in which the knowledge is made explicit, collected, represented and organized, according to a single – supposedly shared – conceptual scheme – knowledge map, and intelligent mobile agents (IMA), that enables the connection to all organization application sources and data/content stores. Special intelligent agents (IA) are used to implement the distributed knowledge management strategy.

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EKPs represent a proper IT solution for the franchise community that can support a knowledge-based business. The high performent AKS together with IMAs build a strong knowledge manager. With the help of a special *IA* incorporated in the portal architecture, the EKP is also suitable for a distributed knowledge management approach considering the franchise community a knowledge network that contains KNs (franchise package and specific/local knowledge of the market).

Portal servers enable organizations to deploy comprehensive solutions - that enable and foster collaboration and coordination across communities of employees, customers, and partners - by providing a framework to develop performant enterprise portals. On the other hand, now with consolidated corporate portals, knowledge management has become one of many value-added services available to selected users. The bottom line is that knowledge management, today, is already very sophisticated and is guaranteed to deliver handsome dividends in corporate portal environments. A portal can provide the infrastructure for KM applications, but it should not be a determinant factor as to how and why KM should be used within a company.

4 Conclusion

Collaboration became a strategic alternative to the monolithic approach to business development and competition. Collaboration facilities improve decisions, increase knowledge. They facilitate better distribution of knowledge, improve planning and development cycles and create more functional and productive relationships within teams. This in turn increases productivity and company understanding of internal and external environments. Overall, employees will begin to have a better view of corporate information and the power to make informed decisions more effectively.

A collaborative enterprise organization is a more agile organization. The ability of employees to quickly share their insights contributes to an organization's collective knowledge, and has a direct impact on its success. Successful companies continually seek and refine ways to make effective use of their employees' collective knowledge and experience. Information technologies that contribute to knowledge management solutions, such as enterprise portals, improve the enterprise's business intelligence and its collaboration capabilities.

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But, paradoxally, the success of any portal-based collaborative environment (any new technology-enabled business model) relies, more than ever, on people's ability to build relationships based on mutual trust. Further research will refer how to manage business relationships between people, within or without groups, and within and between organizations. Future research streams will include work in intercultural communication and collaboration, temporal coordination, and trust in virtual teams.

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